P.7 PRE-PLE SET XII MATHS MARKING GUIDE, 2024

S/N	SOLUTION	MRKS	COMMENTS
1.	6102 +584 6686	M_1 A_1	For correct addition For 6686
2.	y + 7 from 3y — 7 3y — 7 — (y + 7) 3y — 7 — y — 7 3y — y — 7 — 7 2y — 14	M_1 A_1	For correct collection of like terms For 2y — 14
3.	Subsets = 2^n $= 2^5$ = 2 x 2 x 2 x 2 x 2 = 32 subsets	M_1 A_1	For correct multiplying For 32 subsets
4.	Mean = Sum / Number of items $= \frac{14 + x + 2x - 4 + x + 10 + 5 + x}{5}$ $= \frac{14 + 10 + 5 - 4 + x + 2x + x + x}{5}$ $= \frac{5^{1}25 + 5x}{5_{1}}$ $= 5 + x$	M_1 A_1	For correct method For $5 + x$
5.	Numeral = 13_{ten} 2 | 13 | 1 2 | 6 | 0 2 | 3 | 1 1 $= 1101_{two}$	M_1 A_1	For correct division For 1101_{two}
6.	Perimeter = 2 (L + W) = 2 (18 — 6mm + 13 — 6mm) = 2 (12m + 7mm) = 2 x 19mm = 38mm	M_1 A_1	For correct method For 38mm
7.	$= 308.4 \times 10^{-3}$ $= 308.4 \times \frac{1}{1000}$ $= \frac{308.4}{1000}$ = 0.3084	M_1 A_1	For correct method For 0.3084
8.	$1\frac{3}{4}$ Kg to grammes 1kg = 1000gms $1\frac{3}{4} = 1\frac{3}{4} \times 1000$gms $1\frac{3}{4} = \frac{7}{4} \times \frac{250}{1000}$gms = 1750gms	M_1 A_1	For correct multiplying For 1750gms
9.	GCF = 2 x 3 x 5 GCF = 30	M_1 A_1	For correct method For GCF = 30
10.	Time = 12 : 15a.m Time = 12 : 15am — 12 : 00 00 15Hrs	B_1 B_1	For 12 : 15a.m For 0015Hrs
11.	1st offer = Ug Shs. 10,000 2nd offer = Ug Shs. 1500 x 7 days = Ug Shs. 10,500 Ug Shs. 10,000 is the lowest offer	M_1 A_1	For correct method For Ug Shs. 10,000 lowest offer
12.	Tap T takes 5 minutes = $\frac{1}{5}$ Tap Q takes 4 minutes = $\frac{1}{4}$ Both taps = $\frac{1}{4} - \frac{1}{5} = \frac{5-4}{20}$ $= \frac{1}{20}$ 1 tank = $1 \div \frac{1}{20}$ minutes $= 1 \times \frac{20}{1}$ minutes = 20 minutes	M_1 A_1	For forming fractions For 20 minutes
13.	$n + 130^0 = 180^0$ $n = 180^0 - 130^0$ $n = 50^0$ Angle DAN = DAN + $50^0 = 130^0$ DAN = $130^0 - 50^0$ DAN = 80^0	B_1 B_1	For obtaining 50^0 For obtaining 80^0
14.	🍅🍅 represents 14 tomatoes 🍅 stands for $\frac{14^{7}}{2_{1}}$ = 7 tomatoes ? tomatoes = $\frac{35^{5}}{7_{1}}$ = 5 tomatoes 🍅🍅🍅🍅🍅 tomatoes	M_1 A_1	For correct division For 🍅🍅🍅🍅🍅 tomatoes
15.	$(1 \times 10^2) + (4 \times 10^1) + (9 \times 10^0)$ 1 x 100 + 4 x 10 + 9 x 1 100 + 40 + 9 C + XL + IX CXLIX	M_1 A_1	For correct method For CXLIX

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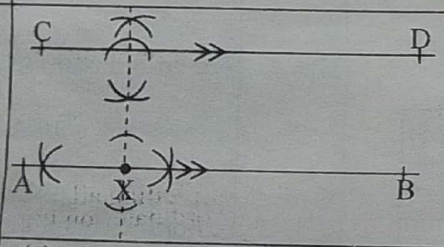
16.	$3 \div 4 = \square$ (finite 7) $(3 + 7) \div 4 = \square$ (finite 7) $10 \div 4 = \square$ (finite 7) $(10 + 7) \div 4 = \square$ (finite 7) $17 \div 4 = \square$ (finite 7) $(17 + 7) \div 4 = \square$ (finite 7) $24 \div 4 = \square$ (finite 7) $6 = \square$ (finite 7) $3 \div 4 = \boxed{6}$ (finite 7)	M_1 A_1	For correct method For $3 \div 4 = \boxed{6}$ (finite 7)
17.	Let the fraction be y $y = 0.6363$ ..... (x100) $100y = 63.63$ ..... ($-y$) $99y = 63$ $\frac{99y}{99} = \frac{63}{99}$ $y = \frac{7}{11}$	M_1 A_1	For correct conversion For $\frac{7}{11}$
18.	Number = 1404 Sum of numerals = 1 + 4 + 0 + 4 = 9 Division = $\frac{9}{3} = 3$ ∴ 1404 is divisible by 3	M_1 A_1	For correct method For 1404 is divisible by 3
19.	$= 2t^2 = 18$ $= 2 \times (-8 \times -8) - 18$ $= 2 \times 64 - 18$ $= 128 - 18$ $= 110$	M_1 A_1	For correct substitution For 110
20.		C_1 A_1	For perpendicular line to point X For accurate line AB parallel to CD
21.	(a) $\frac{0.4 + 0.05}{0.03} = \frac{0.45}{0.03}$ $= 45 \div 3$ $\frac{100}{100}$ $\frac{100}{100}$ $= \frac{45}{100} \times \frac{100}{3}$ $= 15$ (b)  $= \frac{1}{2} \times 12^6 = 6 \times 1 = 6$ ..... ①  $= \frac{1}{3} \times 12^4 = 4 \times 1 = 4$ ..... ②	M_1 A_1	For correct method For 15

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	 $= \frac{1}{4} \times 12^3 = 3 \times 1 = 3 =$ ..... ③ Order =  ,  and 	M_1 A_1	For correct method For , and
	(c) SI = P x R x T $= \text{Shs. } 5000 \times 100 \times \frac{10}{100} \times 1\frac{1}{2}$ $= \text{Shs. } {}^{2500}\cancel{5000} \times \cancel{100} \times \frac{10}{\cancel{100}} \times \frac{3}{\cancel{2}_1}$ $= \text{Shs. } 2500 \times 30$ $= \text{Shs. } 75{,}000$	M_1 A_1 06	For correct multiplying For Shs. 75,000
22.	(a) $3n + n + 15 = 35$ $4n + 15 = 35$ $4n = 35 - 15$ $\frac{\cancel{4}n}{\cancel{4}} = \frac{\cancel{20}^5}{\cancel{4}_1}$ $n = 5$ $n(\mathcal{E}) = 28 + 5n$ $= 28 + 5 \times 5$ $= 28 + 25$ $n(\mathcal{E}) = 53$ tourists	M_1 A_1 B_1	For forming equation For n = 5 For 53 tourists
	(b) Probability = $\frac{EOC}{POC}$ $= \frac{n - 4}{53}$ $= \frac{5 - 4}{53}$ $= \frac{1}{53}$	M_1 A_1 05	For correct method For $\frac{1}{53}$
23.	(a) $2(n - 1) \times$ distance apart $= 2(18 - 1) \times 15$ metres $= 2 \times 17 \times 15$ metres $= 510$ metres	M_1 A_1	For using BODMAS For 510 metres
	(b) $= \left[\frac{3}{4} \times 11\right] + \left[\frac{3}{4} \times 9\right]$ $= \frac{3}{4}(11 + 9)$ $= \frac{3}{\cancel{4}_1} \times \frac{\cancel{20}^5}{\cancel{1}}$ $= 15$	M_1 A_1	For using property correctly For 15
	(c) Let the numbers be; t, t + 2, t + 4 Sum = $t + t + 2 + t + 4 = 45$ $t + t + t + 2 + 4 = 45$ $3t + 6 = 45$ $3t = 45 - 6$ $\frac{3t}{3} = \frac{39}{3}$ $t = 13$	M_1 A_1	For forming equation For least numeral =

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24.	(a) Abdul : Andrew 4 13 $4 + x$ $13 + x$ $2(4 + x) = 13 + x$ $8 + 2x = 13 + x$ $8 - 8 + 2x = 13 + x - x$ $2x - x = 13 - 8$ $x = 5$ = 5 years	M_1 A_1	For forming equation For 5 years
	(b) $2r - 3 < 9$ $2r - 3 + 3 < 9 + 3$ $\frac{2r}{2} < \frac{12^6}{2}$ $r \leq 6$	M_1 A_1 04	For collection of like terms together For $r \leq 6$
25.	(a) $2t + 20^0 + t + 40^0 = 180^0$ $2t + t + 20^0 + 40^0 = 180^0$ $3t + 60^0 = 180^0$ $3t = 180^0 - 60^0$ $\frac{3t}{3} = \frac{120^{40}}{3_1}$ $t = 40^0$	M_1 A_1	For correct use of angle properties For $t = 40^0$
	Angle PEN $= 2t + 20^0$ $= 2 \times 40^0 + 20^0$ $= 80^0 + 20^0$ $= 100^0$	B_1	For PEN $= 100^0$
	(b) $180^0 (n - 2) = 1260^0$ $\frac{180^0 (n - 2)}{180^0} = \frac{1260^{0\ 7}}{180^0_1}$ $n - 2 = 7$ $n - 2 + 2 = 7 + 2$ $n = 9$ = 9 sides	M_1 A_1	For correct method For 9 sides
	Exterior angle $= \frac{360^0}{\text{Number of sides}}$ $= \frac{360^{040}}{9_1}$ $= 40^0$	B_1 06	For exterior angle 40^0
26.	(a) 1 Kenya Shilling costs Ug Shs. 28 50 Kenya Shillings cost Ug Shs. 28×500 2 text books costs Ug Shs. $28x 500 \times 2$ = Ug Shs. 28000	M_1 A_1	For correct multiplying For Ug Shs. 28000
	(b) 1 US dollar costs Ug Shs. 3700 70 US dollars cost Ug Shs. 3700×70 = Ug Shs. 259000	B_1	For Ug Shs. 259000
	1 Kenya Shsilling costs Ug Shs. 28 ? Kenya Shilling cost Ug Shs. $\frac{259000^{9250}}{28_1}$ = 9250 Kenya Shillings	M_1 A_1 05	For correct division For 9250 Kenya Shillings

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27.	(a) Volume of Can A $= \pi r^2 h$ $= \frac{22}{7} \times 7cm \times 7cm \times 20cm$ $= 154cm \times 20cm$ $= 3080cm^3$	B_1	For $3080cm^3$
	$L \times W \times H = 3080cm^3$ $22cm \times 10cm \times w = 3080cm^3$ $\frac{220cm \times w}{220cm} = \frac{3080cm^3}{220cm}$ $W = 14cm$	M_1 A_1	For correct division For width = 14cm
	(b) Volume of Can X $= 3080cm^3$ 1 litre $= 1000cm^3$? Litres $= \frac{3080cm^3}{1000cm^3}$ = 3.08 litres	M_1 A_1 05	For correct conversion For 3.08 litres
28.	Ratio increase = 11 : 8 — 7 : 4 4 : 4	B_1	For difference in ratio 4 : 4
	Cecilia = 4 parts represent 16 years 1 part represent $\frac{16}{4}$ 11 parts represent $\frac{16^4}{4_1} \times 11$ years = 44 years	B_1	For Cecilia = 44 years
	Tom = 4 parts represent 16 years 1 part represent $\frac{16}{4}$ 8 parts represent $\frac{16^4}{4_1} \times 8$ = 32 years	B_1	For Tom = 32 years
	Sum of their age = 44 + 32 years = 76 years	B_1 04	For Sum of age = 76 years
29.	(a) Duration = Departure time — Arrival time = 2 : 00p.m + 12 : 00noon 14 00Hrs = 14 : 00 — 12 : 50 noon 1 : 10 minutes = 1 hour 10 minutes	M_1 A_1	For correct subtraction For 1 hour 10 minutes
	(b) Distance = Speed x Time Time = (4 : 45pm + 12 : 00) — 11 : 15a.m = 1645Hrs — 11:15a.m		

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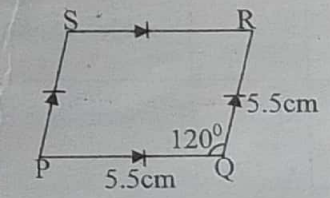
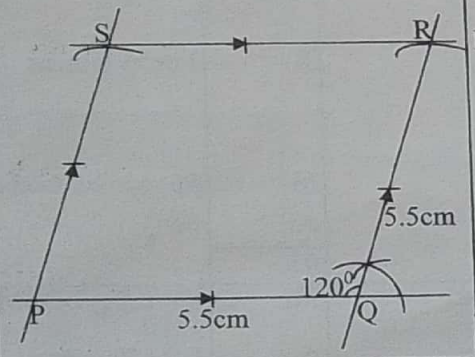
	16 45Hrs — 11 : 15 5 30 min $= 5\frac{1}{2}$ hours	B_1	For obtaining $5\frac{1}{2}$ hours
	Distance = $\frac{90km/hr \times 5\frac{1}{2} hr}{hr \times hr}$ $= \frac{45}{1}90km \times \frac{11}{2_1}$ $= 45km \times 11$ $= 495km$	M_1 A_1	For correct method For 495km
		05	
30.	SKETCH  	S_1	For correct sketch
	 	L_1 L_1 C_1	For Length PQ = 5.5cm For Length QR =5.5cm For accurate angle 120^0
		04	
31.	(a) Area = πr^2 $\frac{7}{7} \times \frac{22}{} \times r^2 = 1386m^2 \times 7$ $\frac{22}{22} \times r^2 = \frac{63}{22_1}1386m^2 \times 7$ $r^2 = 63m \times 7$ $\sqrt{r^2} = \sqrt{441}m$ $r \times r = 21m \times 21m$ Radius = 21m	M_1 A_1	For correct method For radius 21m

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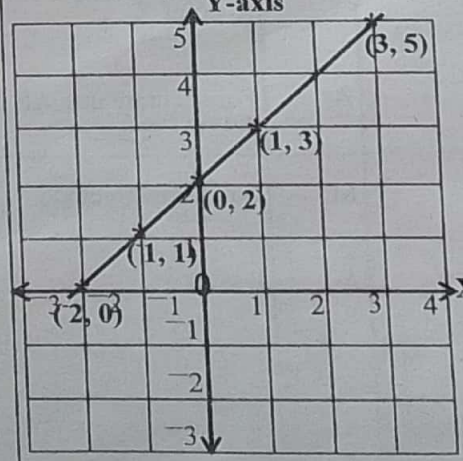
	(b) Circumference = $2\pi r$ $= 2 \times \frac{22}{7_1} \times \frac{3}{21}m$ $= 44 \times 3m$ $= 132m$	B_1	For 132m
	Number of poles = $\frac{T.\ Distance}{Distance\ apart}$ $= \frac{33}{1}\frac{132m}{4m}$ $= 33$ poles	B_1	For 33 poles
	Cost of poles = 1 pole costs Shs. 3000 = 33 poles cost Shs. 3000 x 33 = Shs. 99000	B_1	For Shs. 99000
		05	
32.	(a) Co-ordinates are; (i) $(\bar{2}, 0)$ (ii) $(\bar{1}, 1)$ (iii) $y = x + 2$ $y = 0 + 2$ $y = 2$ $= (0, 2)$	B_1	For co-ordinates (0, 2)
	(iv) $y = x + 2$ $y = 1 + 2$ $y = 3$ $= (1, 3)$	B_1	For co-ordinates (1, 3)
	(v) $y = x + 2$ $5 = x + 2$ $x = 5 - 2$ $x = 3$ $= (3, 5)$	B_1	For co-ordinates (3, 5)
	 	P_1 J_1	For plotting all co-ordinates on the graph For joining all points together to form a straight line
		05	